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Newton, Massachusetts

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17. ABSTRACT (MAX. 250 WORDS)

A report designed to acquaint school administrators with a new development in school planning and design is presented. It attempts to show why the school was designed as it was, how it was designed and built, the educational basis of the design, and the relation of the school to the program for which it was planned.

Such topics as the community background, reasons for building the new hign school, class organization, the unique house plan of the school, the buildings that constitute the school plant, and cost information are briefly discussed. Newton South is designed to house a program of varying class sizes. Accommodations for large group instruction will enable the continuation of the Newton Plan studies of the present high school, and more room and more appropriate facilities will make small group instruction more feasible than it was in the old school. The student body will be divided among three houses situated in three separate buildings, with about 500 students per house. Each house will have its own housemaster, usually an experienced teacher, and its own full-time guidance counselor; they will form the nucleus of the staff. The school, consisting of six two-story buildings grouped around a library, contains 214,798 square feet of space and will cost $14.16 per square foot and $2,028 per pupil at the designed load of 1,500 students.

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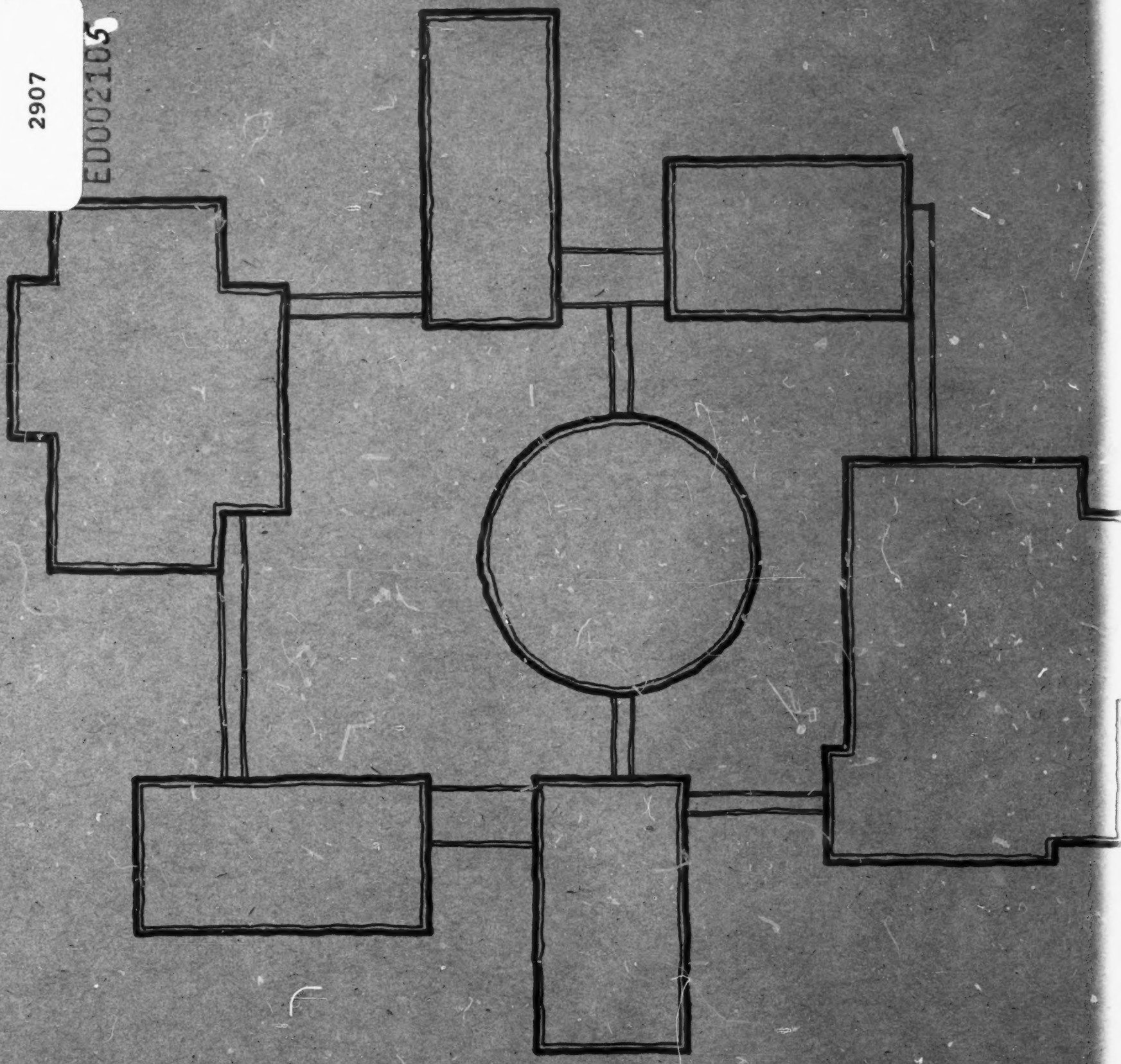

PROFILES OF SIGNIFICANT SCHOOLS

NEWTON SOUTH HIGH SCHOOL
NEWTON, MASSACHUSETTS

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Profiles of Significant Schools

N E W T O N S O U T H H I G H S C H O O L

N E W T O N , M A S S A C H U S E T T S

Prepared by
Evans Clinchy
Editorial Associate

February 1960

Educational Facilities Laboratories, Inc.
477 Madison Avenue, New York 22, New York

Profiles of Significant Schools

General Introduction

This is one of a series of "Profiles of Significant Schools." The series is designed to acquaint school administrators and members of boards of education with some of the latest developments in school planning and design. What makes a school significant? It may be an unusual solution to housing the school's educational program which is itself unusual. It may be an architectural solution of great promise. Or it may be an illustration of one point of view on an architectural issue, e.g. air conditioning, portability, subdivisibility.

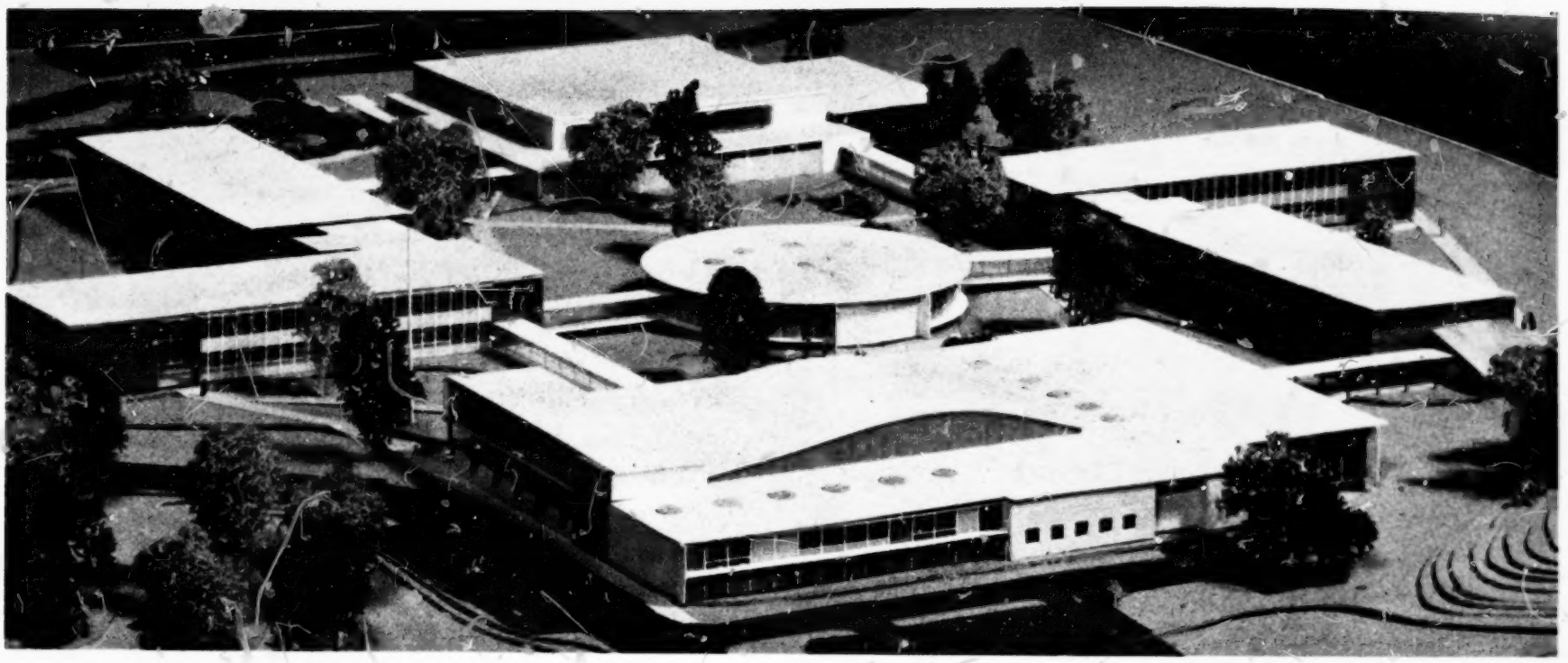
Since a school cannot be fully understood apart from the program it houses, these profiles will generally describe briefly the educational bases of the design of the buildings. The profiles will attempt to show two things: first, why the school was designed as it was; and second, how it was designed and built. If possible, an evaluation of the school in relation to the program for which it was planned will be included.

These are profiles of individual schools, built in individual communities, to house individual programs. They may not serve ideally in other settings for other programs. However, they represent - in EFL's eyes - significant approaches to schoolhousing. We hope they will stimulate new and better schools.

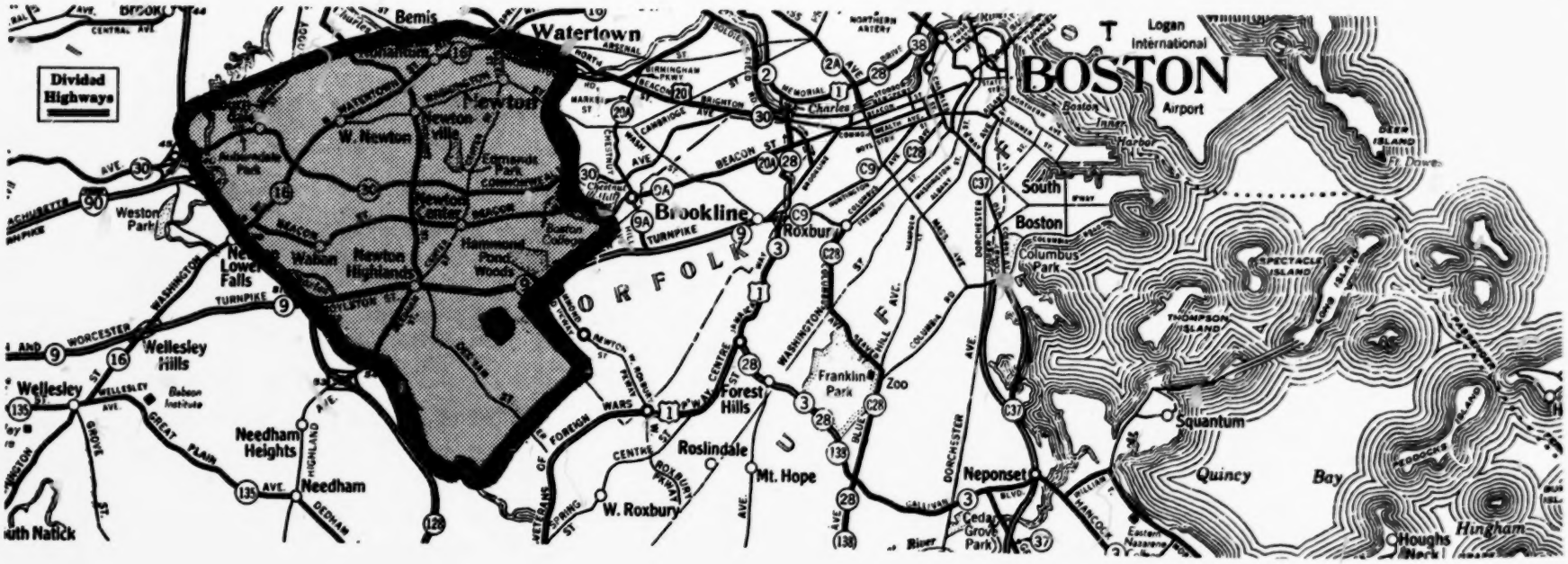
The series of profiles is itself an experiment and we would appreciate your reactions to it as well as suggestions for making future profiles more useful.

Additional copies are available from the offices of Educational Facilities Laboratories, Inc., 477 Madison Avenue, New York 22, New York.

School:	Newton South High School Newton, Massachusetts
Size of enrollment:	1,500 students
Grades:	10 - 12
Architects:	Korslund, Le Norman & Quann Norwood, Massachusetts
In charge of design:	Leonard W. Quann
Superintendent:	Eric N. Dennard
Assistant Superintendent:	Charles E. Brown
Director of Business Services:	John E. Gilleland
Chairman of School Committee:	Haskell C. Freedman



The school and its location.



1" = app. 2.8 mi.

Nearly three quarters of the breadwinners among the 92,000 inhabitants of Newton, Massachusetts, commute from Newton every morning to earn their livelihood elsewhere.

Most of them travel east eight miles into downtown Boston. There they work as executives, doctors, lawyers, college teachers, or businessmen. Lately, however, more and more Newtonians are riding off in other directions to the sleek new offices, research plants, and factories ringing metropolitan Boston.

Newton is not just an affluent bedroom suburb. Plastics, textiles, and electronics equipment are turned out in local plants. The resulting diverse population produces for Newton's schools students with a wide variety of talents and interests. The result so far as the Newton schools are concerned is a need for a comprehensive program which attempts to serve all the talents of the community.

But Newton is a city with an average family income of more than $10,000 per year. It is in New England and in the heart of Ivy League country. It shares with many another eastern suburb the desire to get its large percentage of able youngsters into college and preferably into a well-known institution. In the present high school 80 per cent of the students do go on to some form of higher education.

There are 3,145 students in the existing Newton High School, all of them housed in three buildings with a combined capacity of 2,400. One of these buildings was built in 1878. In 1955, therefore, the School Committee decided that Newton needed another high school.

The New High School

Newton South, when completed, will serve the southern section of the city. Although each school will have its own principal, the heads of the subject departments will operate for both schools.

Newton South will offer the same four-track program that Newton High School now offers: Curriculum I for students who are headed for the intellectually more rigorous colleges, Curriculum II for those who want a more general but still academic

program and who will go to less demanding colleges, Curriculum III for the slow learners, and Curriculum IV for those who want primarily business training. In the present high school about 55 per cent of the students are taking Curriculum I, 25 per cent Curriculum II, 5 per cent Curriculum III, and 15 per cent Curriculum IV. There is a separate 300-student technical school for those who plan to enter the skilled trades.

Class Organization

Newton South is designed to express the following ideas about how high school classes should be organized:

> Students, especially those who are going to be more or less on their own in college, should start in high school to take a larger share of the initiative and responsibility for their own education.
>
> Uniformity of class size is not really wise or truly efficient. Some areas of learning demand small group work, and other areas are best adapted to instruction in groups of 200 using a lecture system with large amounts of visual material.
>
> Different teachers, like different students, have different abilities. Some perform best in lectures, others in normal classroom work, others in seminar groups, and students should get the best kind of work which each teacher is equipped to offer.

The school people were also concerned with the problems of making the best teachers available to more students, making the teachers' jobs more varied and exciting, and conserving the energies and the time of teachers so that their talents could be used more fully and economically.

Some of these ideas were put into experimental practice in 1956 with the introduction of Newton Plan studies, or large group instruction, in the English department of the present high school. Three rooms were converted into large group instruction halls and were equipped with overhead projectors so that written, photographed, or drawn visual material could be flashed on a large

screen and seen by many students at the same time.

Groups ranging from 65 to 200 students were gathered in these rooms for special instruction in 13 English topics, including composition, the dictionary, grammar, letter writing, the library and the research paper, literature, and vocabulary. The students were instructed in the techniques of taking notes and were required to take them.

Evaluation resulted in the conclusion that, although not perfect, the large group classes were successful, and the system was broadened to include mathematics, music, social studies, and business.

The large group classes usually take two forms: basic learning, such as paragraphing and topic sentence lectures in English; and lectures designed to give more background or to stir up greater student interest. For instance, a lecture might explore the Anglo-Saxon and Middle English origins of the English language or it might describe life in Elizabethan London.

The amount of large group instruction which each student receives varies according to his class level and curriculum. Sophomores have more of these large classes than the other students do, with a Curriculum I sophomore conceivably having three large group classes per week. For the whole school, the average is about one large class per week.

So far, the main achievement of the experiment in the old school has been twofold: the setting up of large group classes and the stimulating of much revision even in parts of the curriculum not directly involved in large group work. In addition, although there has been no marked saving as yet in the number of teachers required to operate the high school, there has been a reorganization of teacher time and teacher duties. Most of the teachers in Newton High School now teach only four periods a day, compared to five and even six previously. And teachers assigned to the experiment have large group lecturing as their sole job.

There has been little introduction of small group instruction, but this is, in some measure at least, the result of a lack of the appropriate smaller spaces and the difficulties of scheduling in the old school.

Newton South, however, is a school designed in part to house a program of varying class sizes. It is expected that the more appropriate facilities of Newton South will make small groups more feasible. Such grouping will also become possible in the existing Newton High School when Newton South relieves the overcrowding.

House Plan

Newton South also attacks the curse of mass impersonality in a large school plant.

The school people wished:

> To establish communication between the staff and the students, both as a group and as individuals;
>
> To split up the students into more intimate groups and still retain administrative efficiency;
>
> To control the flow of traffic more efficiently;
>
> To organize the sports and extracurricular programs to give everyone a chance to participate on some level, rather than to restrict participation to the outstanding athletes or the natural leaders of the whole school; and
>
> To give both students and parents the feeling that the students are not wandering without guidance in a large high school, "living out their days", as the school has put it, "in anonymity, their names sometimes mispronounced at graduation."

To achieve these aims, the student body will be divided among three houses situated in three separate buildings, with about 500 students per house. Each house will have its own housemaster, usually an experienced teacher, and its own full-time guidance counselor.

The housemaster and the guidance personnel will form the nucleus of the staff, and around them will be grouped the 500 students representing a cross section of the three grades in school.

All departments of the faculty will be represented in each house. Thus each house will be a small school community within a larger school.

Each house will operate as a separate unit having its own records system, its own student council, its own planning committee for its own assemblies, its own extracurricular clubs, drives, and activities, and its own teams for inter-house sports competition. Each of these home organizations will send delegates to the all-school organizations, but no one will have to buck 1,500 competitors for some small place in the social sun.

On entering, a student will be assigned a home room and a home room teacher. This teacher will stay with the same group throughout the three years of high school and will thus have an opportunity to know each student.

The attempt will be made to have most of a student's classes held in his own house. This will cut down on traffic and release the student from the necessity of time-consuming trips over the entire school. Some classes, such as labs and large group instruction, cannot be decentralized into each house since the cost of duplicating these elaborate facilities is prohibitive. Advanced placement classes must be run on an all-school basis too, since no single house will have 12 to 15 extremely bright students in every subject.

The houses will also be the center of a student's other activities. There will be common rooms where students can gather to study, or hold meetings, or just relax during free periods.

The teachers, too, will benefit from the house plan. Instead of strong subject departments with each set of teachers gathered in a closely knit group of offices and with each teacher almost solely responsible to his department head, the teachers will be deliberately spread throughout the school and grouped by house rather than by subject. All of the teachers in a house will have the opportunity to work as a team. There will be, in fact, an opportunity for greater rapport among all house members, both teachers and students. The department heads will still be in charge of the academic work, but housemasters will be given some of the responsibility for supervising teachers, for evaluating

and assisting new teachers, and for hearing teachers' criticisms and suggestions.

It was originally planned to institute the house system just in the new South High School where the whole plant could be designed around the system. But the old school was afflicted with size, too.

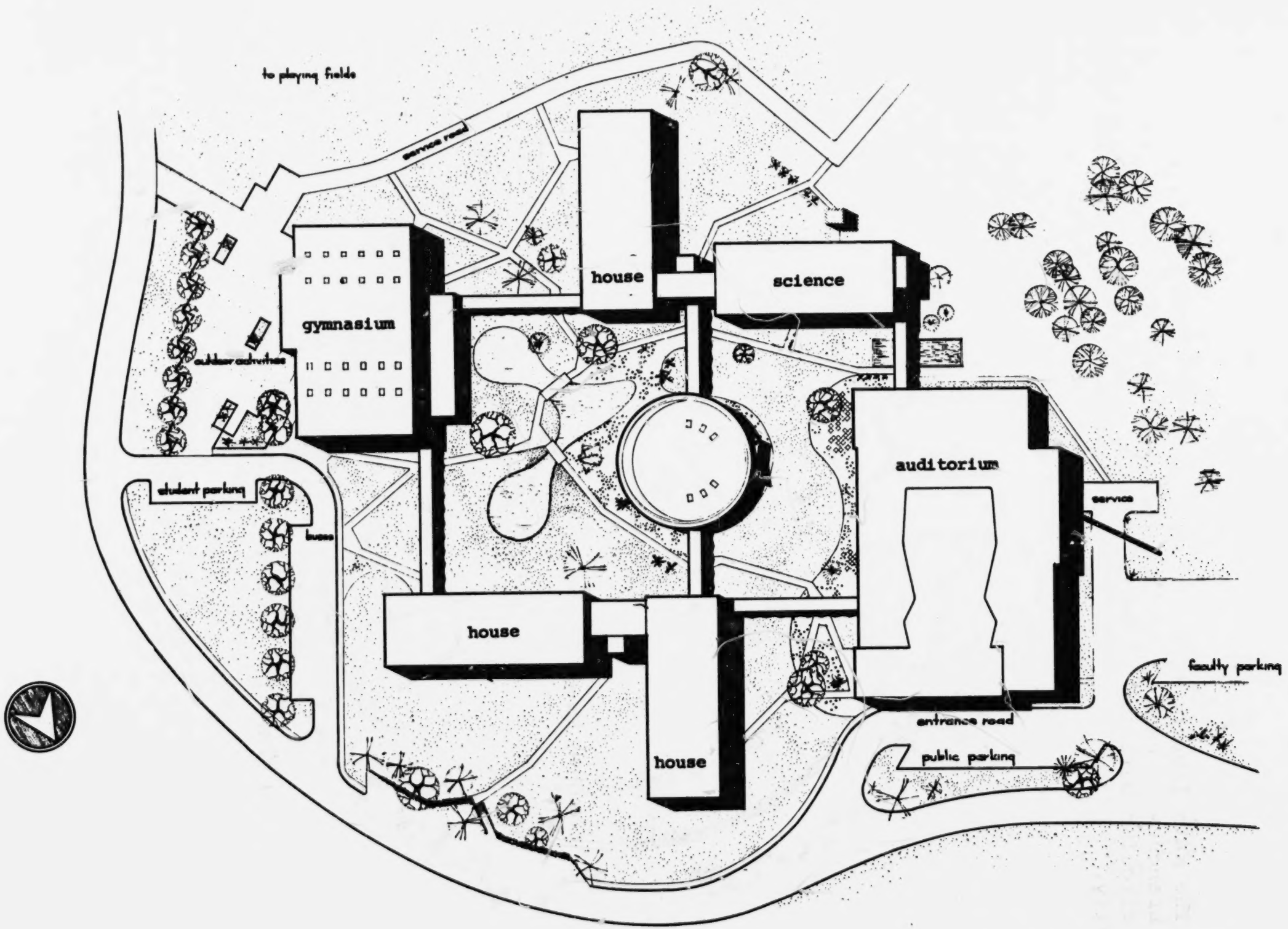
In the fall of 1959, the house plan was, therefore, put in operation on an experimental basis in the old high school. The administrators feel it has been a notable success. Discipline problems, which plague any high school, have been markedly lessened. The housemasters, guidance counselors, and teachers feel much closer to the students, more in touch with their personalities and problems. The house system has also made it easier for the administrators to keep in touch with the parents, to keep them informed of problems, and to find out what may be worrying them.

The students feel that the house plan is a definite improvement over the old system. When a random dozen of the students were asked for their reactions to the house plan and school program, they said that the school had become a great deal more human, less institutional. They felt that they are treated more as individuals and have a "bigger say in what goes on." They agreed that they "raise less hell - it's harder to get away with it."

The Buildings

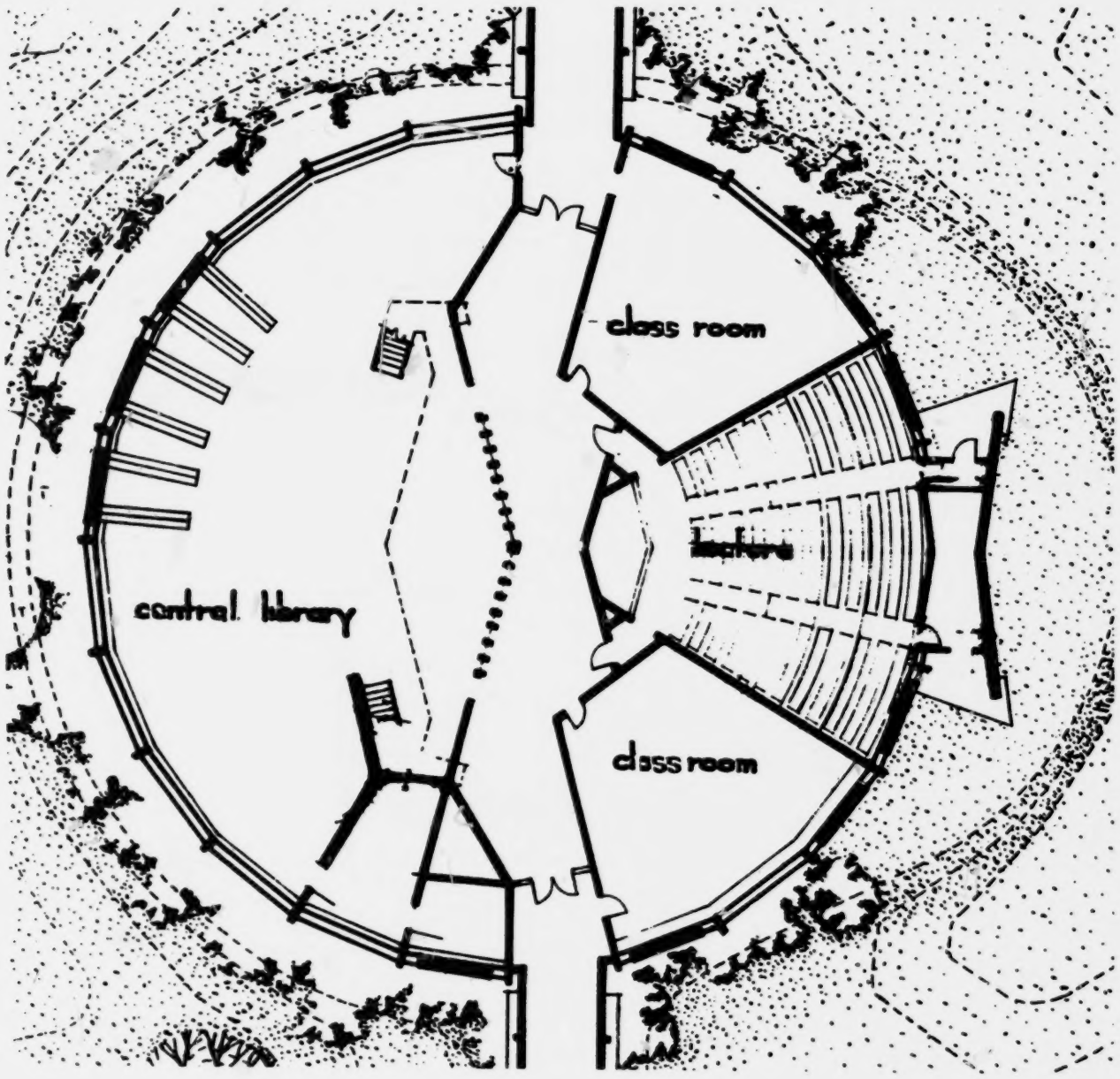
The school consists of six two-story buildings grouped in a rectangular manner around a central, circular, one and a half story library structure.

The buildings are arranged in this modified campus layout in an attempt to provide two somewhat opposing qualities - separation and compactness. Separation is essential if the houses are to be given their full chance to function as single units and if congestion is to be kept down. Compactness is needed to make the joint facilities, such as the library, gymnasium, and cafeteria, easily accessible and to help keep down the cost of mechanical systems such as heating and ventilating.



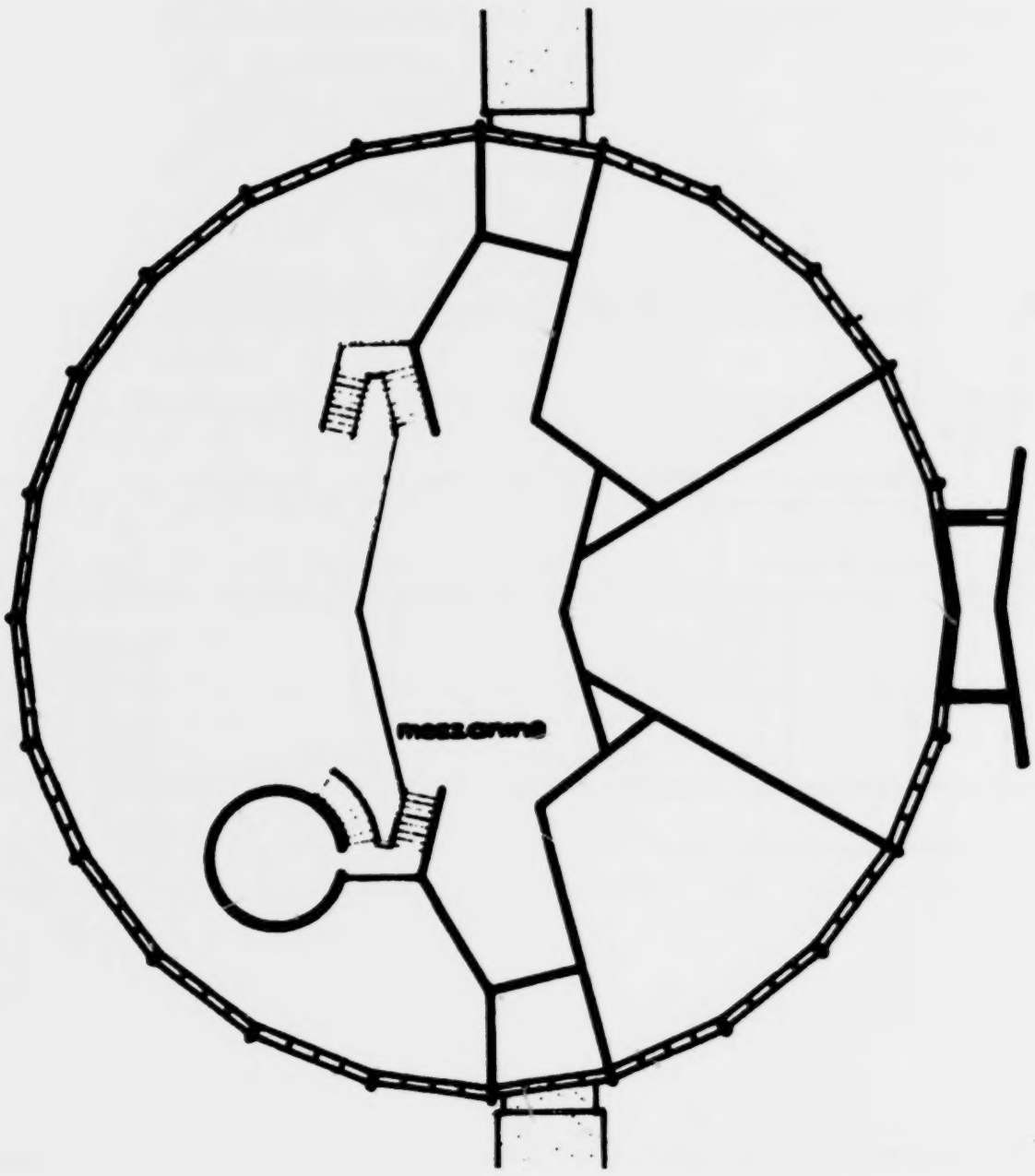
The plan of the school.

The main library will perform primarily as a central library with branches in each of the houses and in the science building. This circular building is designed to be the focus of the school's activity.



The main library.

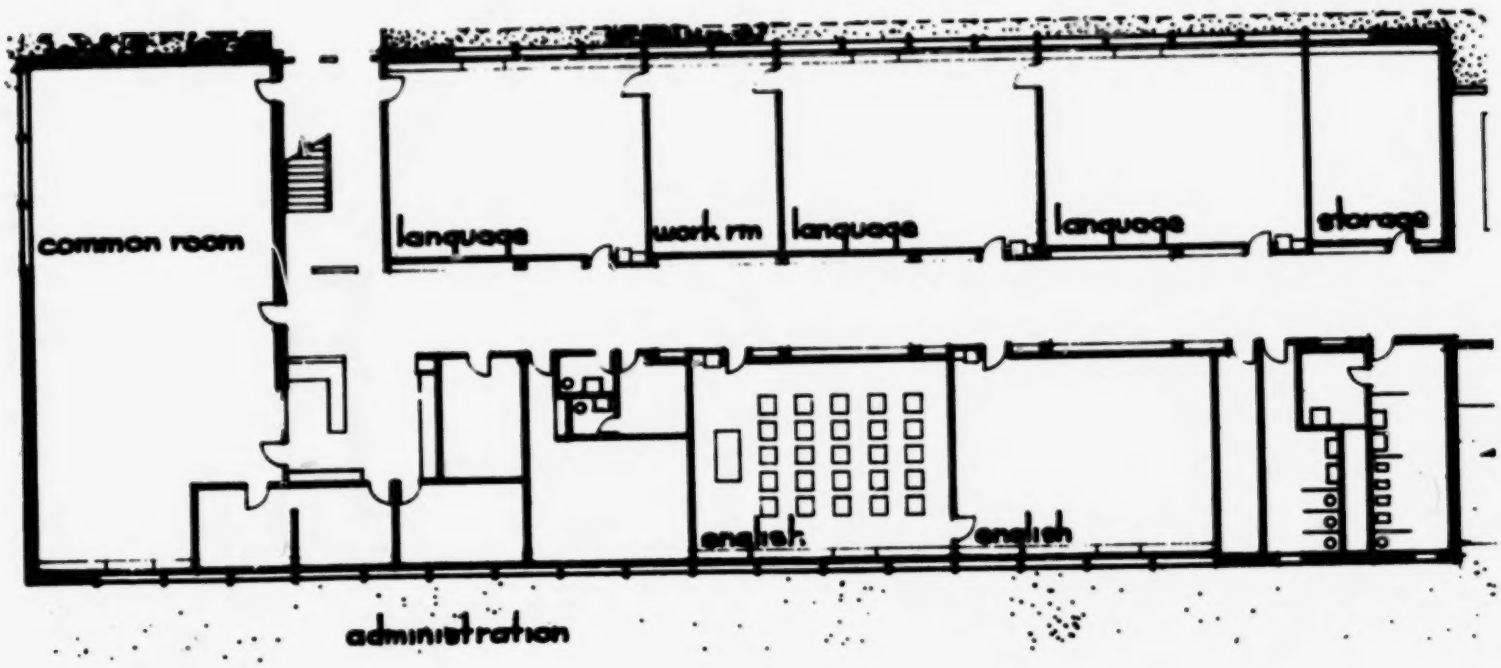
Besides the main library space, the building contains two trapezoidal classrooms and a large, sloped-floor, 190-seat lecture hall, It is in this hall, equipped with overhead projectors, that much of the large group instruction will take place. Upstairs there will be a smaller room for faculty meetings, staff conferences, seminars, etc.



The library mezzanine.

The three houses are all two-story buildings of similar design and are equipped, for the most part, with similar facilities. However, each house will have its unique color scheme and its distinctive touches in interior arrangement and decor.

The first floor contains three language classrooms and two English classrooms of conventional size, office space for the housemaster and guidance staff, toilet facilities, and the large common room. One house has a language laboratory equipped with electronic recording and playback equipment. This will be used by the whole school.

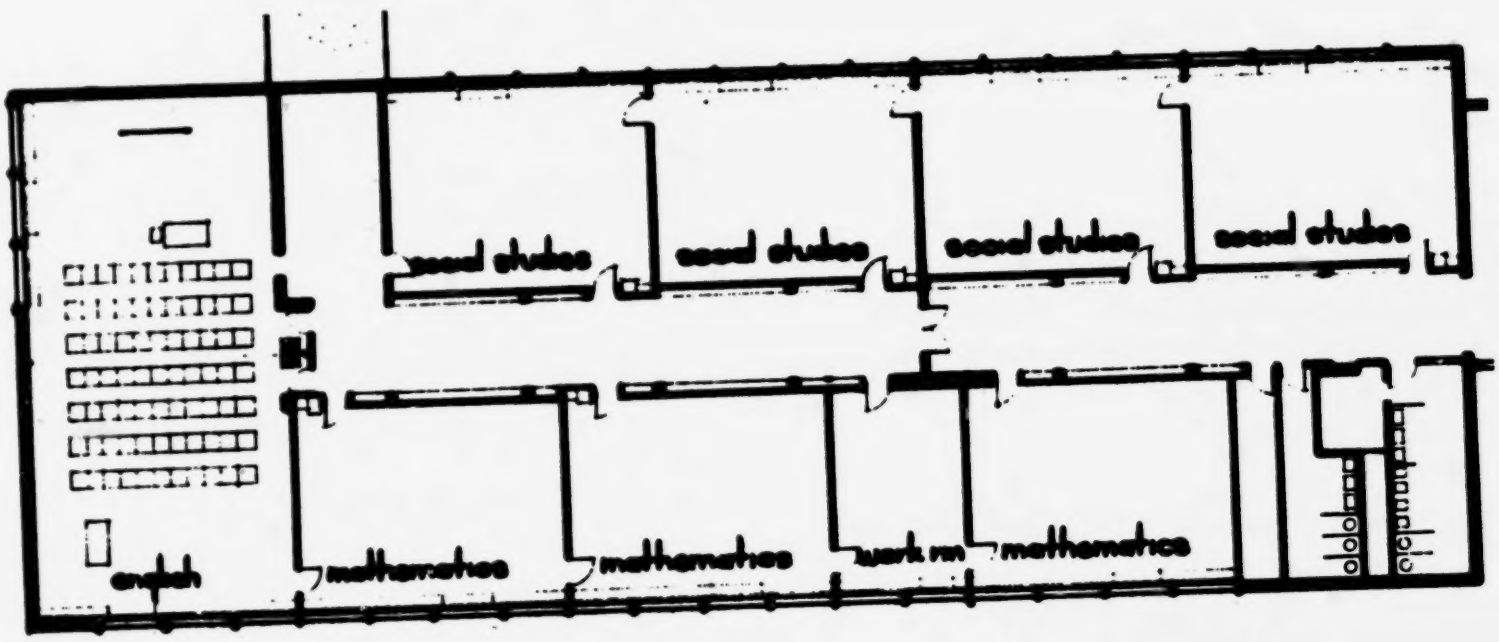


First floor of a typical house.

It is the common room and the large group room which make these houses distinctive. These two spaces complement each other, the large group room providing the efficient Newton Plan benefits, the common room providing the more relaxed atmosphere which the house plan is designed to promote.

The common room, in the absence of specialized space for small group instruction, will serve for seminar groups as well as for study halls, committee meetings, relaxation, and other informal activities. It contains the branch library facilities, books and periodicals, and comfortable furniture. It will be the center of the social and personal life of the students in the house. Offices for house guidance counselors and housemasters will be just off the common room to make these people readily available to the student.

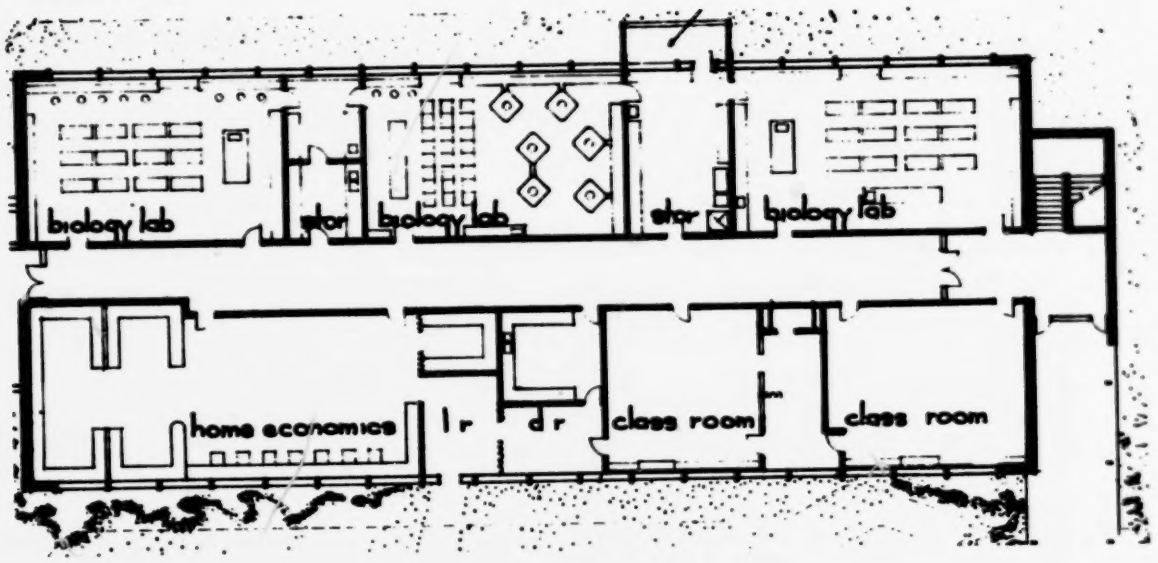
The large group room has a movable partition dividing it in half, so that it can be used as two conventional classrooms when not in use for large group instruction.



Second floor of a typical house.

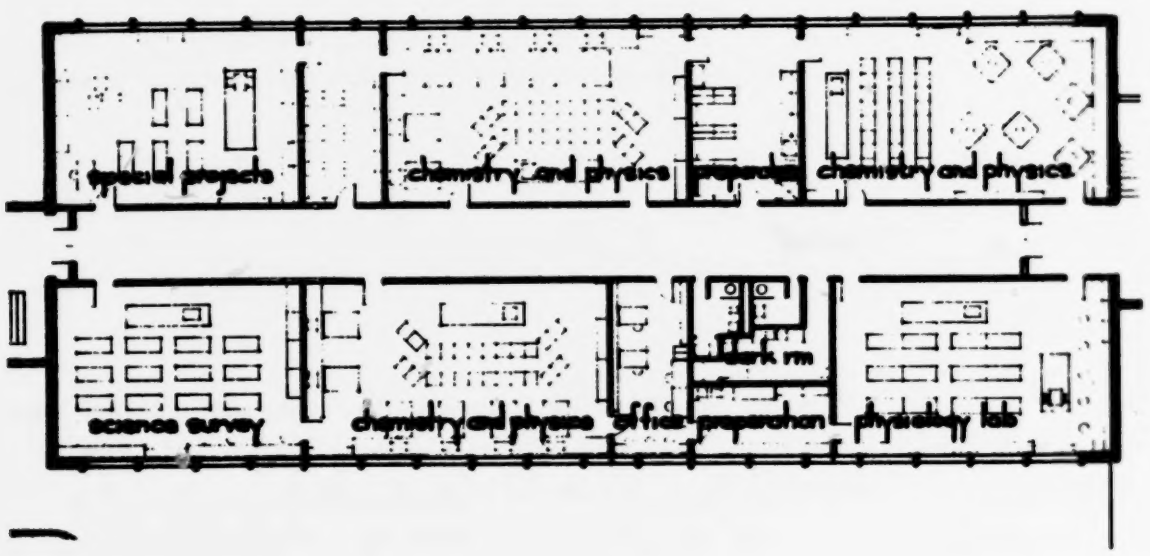
The second floor of this house contains three conventional math and four conventional social studies classrooms, a workroom for project work and visual teaching materials, and the large group instruction room seating up to 100 students. (There are slight variations in all the houses.)

The science building has the biology and home economics labs on the first floor. This floor also has two classrooms and two storage rooms.



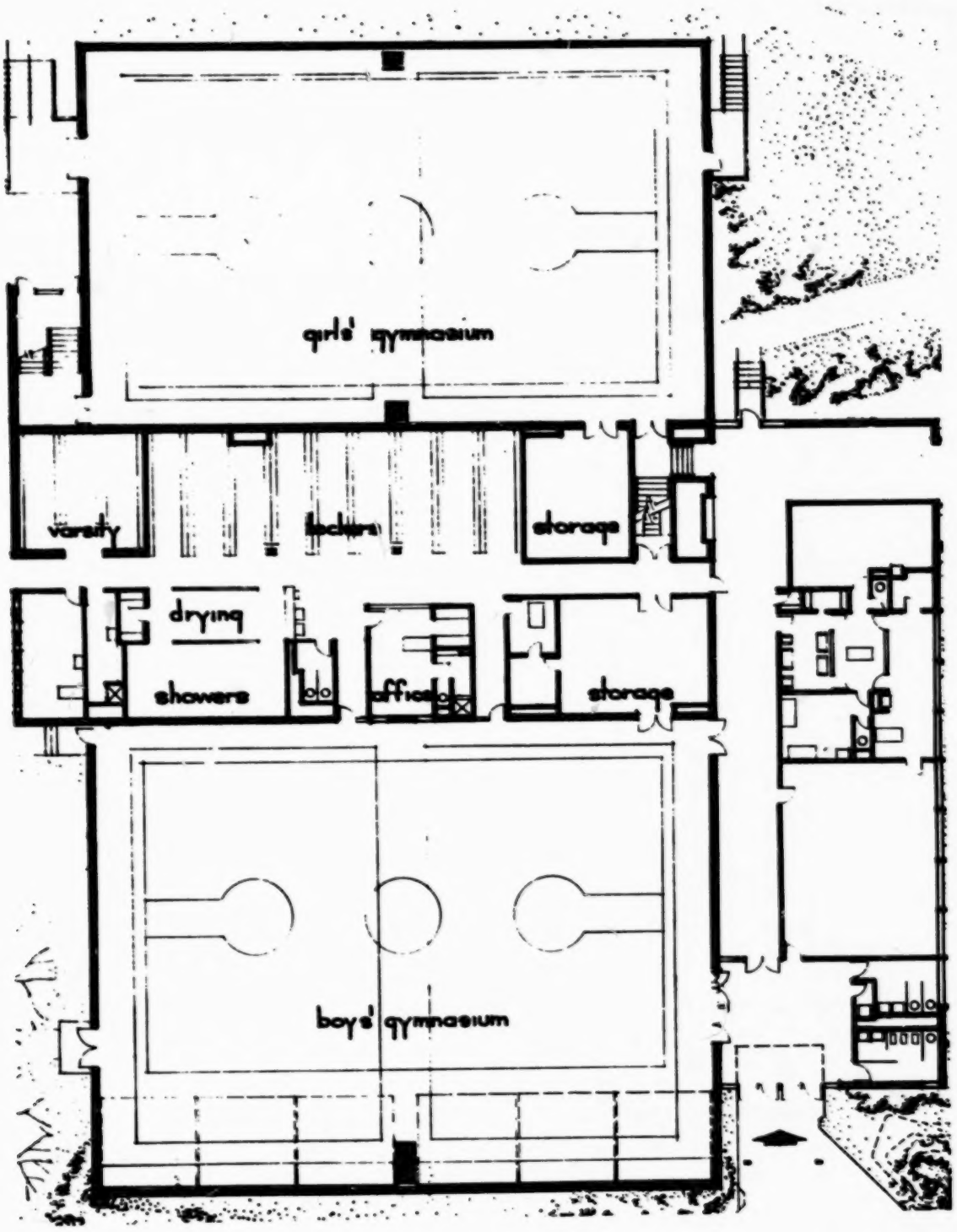
First Floor

On the second floor there are the special projects room, the chemistry and physics laboratories, and special rooms for general science and physiology, teachers' office, a photographic dark room, and space for teachers to prepare instructional materials.



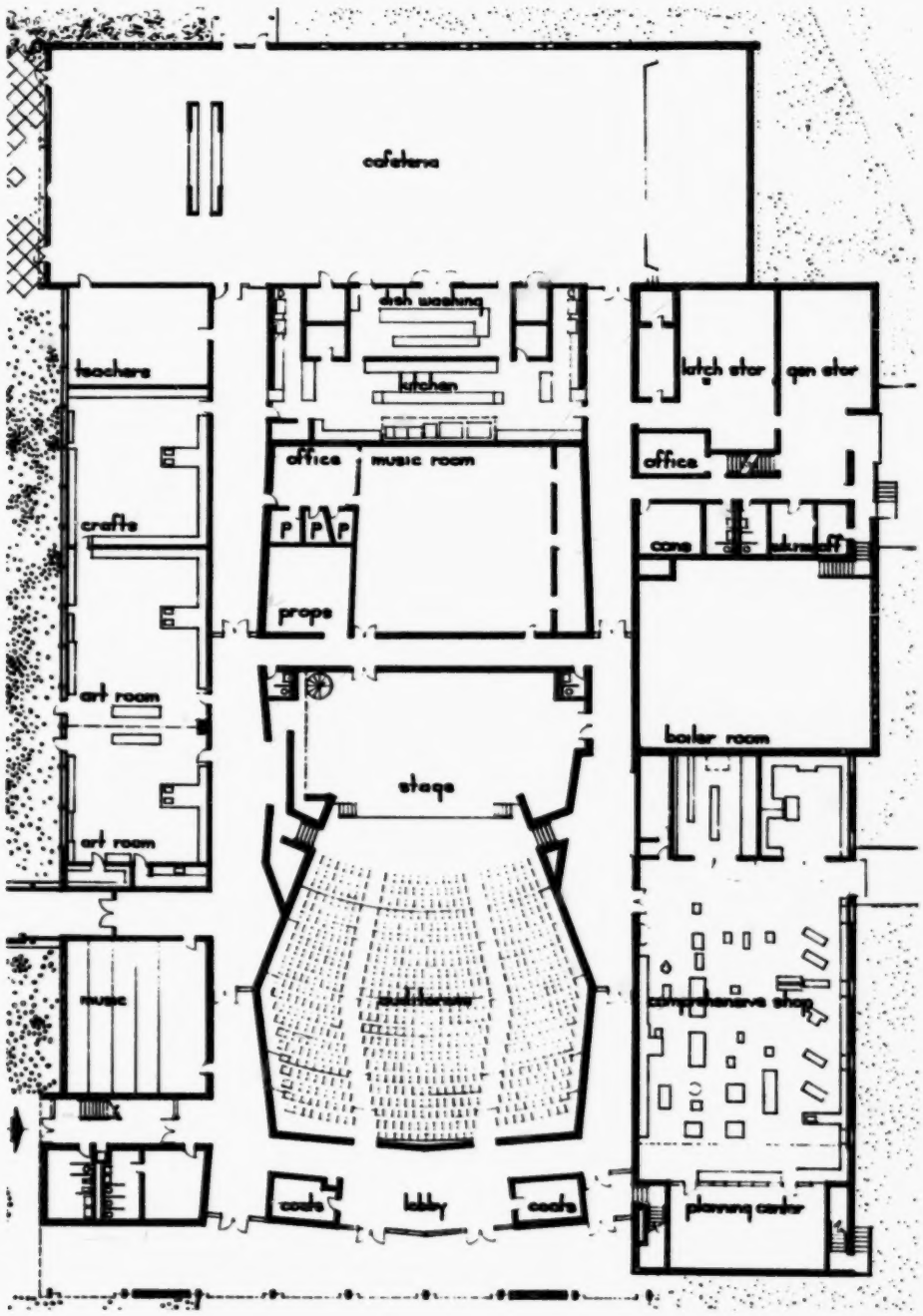
Second Floor

The gymnasium has separate sections for boys and girls with appropriate locker room space, offices, and storage room.



The gymnasium.

The auditorium building, besides the 659-seat auditorium, contains the cafeteria, a teacher dining room, kitchen, food storage space, the arts and crafts rooms, music rooms, industrial arts and technical drawing rooms, the administrative and central guidance offices, and business instruction rooms.



The auditorium.

The Cost of Newton South

This high school was designed as an economical school, not a cheap school. It is economical in the sense of providing the desired facilities at a reasonable cost. Newton has the highest per capita debt of any city in Massachusetts as a result, in large measure, of its school building program. Cost, therefore, was an important consideration.

The architects have attempted to exclude all superfluous space. The regular classrooms are 768 square feet in size. Shops, laboratories, music rooms, the cafeteria, the home economics spaces, and the gymnasium were kept within strict space bounds. The space for the lecture hall in the library, for instance, was taken away from the auditorium, which accommodates less than half of the students. The library was to have been a larger building, but it was shrunk in the cost laundry.

The school is built predominantly of brick, steel, glass, and precast exposed aggregate concrete. Most of the walls are curtain walls. The heating system is high pressure steam, fed from oil-fired boilers through mains to hot water convectors in each building.

The school contains 214,798 square feet of space, including 4,590 square feet of enclosed walkways between buildings. The total cost of the building exclusive of the cost of the site or its development, and the cost of equipment, was bid in at $3,042,137. This gives a square foot figure of $14.16 and a per pupil cost of $2,028 at the school's designed load of 1,500 students.

The cost of the developed site for Newton South will run high. Adequate land is not easily or cheaply obtained in a heavily populated city such as Newton.

When the time came to choose a site, there were only two possibilities:

1. A 30 acre site that included the best undeveloped land in the city, or

2. A 39 acre plot adjacent to other city-owned land comprising a playground area of 35 acres, an elementary school site of 8 acres, a junior high school site of 5 acres, thereby creating a single city-owned parcel of 87 acres.

The School Committee, the Mayor, and the Board of Aldermen chose the site requiring expensive development for these reasons:

High Quality Site	Low Quality Site
Location	
Off center in relation to master plan and school population.	On center - also close enough to the junior high school to enhance the possibility of breaking down rigid grading of students.
Cost of Land	
High, and the acquisition of additional land to make an adequate site would not only be expensive,but also could involve prolonged litigation.	Free, and additional land could be procured easily at a relatively low cost (total final cost of site: $110,000).
Cost of development	
Low - the best land in the city for any purpose.	Very high - one section is a peat bog; the ultimate cost of development will be nearly $500,000.

Other Considerations

Cost of pupil transportation higher; removal of high yielding property from the tax list; litigation might delay school indefinitely.

Pupil transportation low; little loss of taxes; site could be obtained quickly to build a much-needed school.

With the site and its development running to $587,000 and with the equipment expected to cost $550,000, the final square foot cost for the finished school is $19.45, and the final cost per pupil is $2,786.

GENERAL CONTRACT

1.	Bond	$ 22,000
2.	General conditions & overhead	72,000
3.	Building excavation	27,013
4.	Utilities	17,605
5.	Reinforcing steel	87,413
6.	Cast in place concrete piles	72,500
7.	Concrete grade beams & foundations	114,697
8.	Concrete superstructure & slabs	194,858
9.	Exterior masonry	181,443
10.	Precast concrete	90,650
11.	Interior masonry	77,157
12.	Structural steel	96,720
13.	Long & short span joists	84,345
14.	Poured in place roof deck	70,205
15.	Rough carpentry	40,272
16.	Finish carpentry	90,560
17.	Folding partitions	32,348
18.	Chalkboards, tackboards	19,547
19.	Metal doors & frames	30,885
20.	Flag pole	967

21.	Metal lockers	$ 34,193
22.	Greenhouse	5,272
23.	Vertical sun shield	4,768
24.	Metal toilet partitions & shower stalls	10,200
25.	Wood floors	18,500
26.	Metal roof deck	10,316
27.	Roofing & flashing	45,200
28.	Metal windows	66,110
29.	Curtain walls	23,027
30.	Waterproofing, damp proofing & caulking	18,840
31.	Miscellaneous & ornamental iron	37,300
32.	Lathing & plaster	191,000
33.	Acoustic tile	14,090
34.	Tile & terrazzo, flagstone, slate	43,000
35.	Resilient floors	37,776
36.	Glass & glazing	33,244
37.	Painting	44,490
38.	Plumbing	163,799
39.	Heating & ventilating	455,000
40.	Electric	293,136
41.	Finish hardware	25,265
42.	Kitchen equipment	41,678
43.	Electric dumbwaiter	2,748
	TOTAL	3,042,137 *

* This figure does not include site work (fill, bituminous concrete, and loam) which will cost $477,000.

APPENDIX

Excerpts from: EDUCATIONAL SPECIFICATIONS FOR NEWTON SOUTH HIGH SCHOOL, Newton Public Schools, Newton, Massachusetts, June 1, 1957.

PREFACE

Essentially a school building is an envelope which is drawn around the people and the process it is to contain. Its design flows from what the people will be doing in the building and the contour of the land on which it rests. Its materials are selected according to the severity of the climate from which it is to protect the occupants and how long the building is intended to last. Basic to both design and materials is economy and beauty.

The design of a school reflects the philosophy of its times. There are many published statements of what a school should be and do, most of which say about the same thing, namely, that the days of educating a select few beyond the grammar school for a handful of professions are long past. It is now the high school's task to provide opportunities for every youngster to develop to the greatest possible extent all that is in him in body, mind, and spirit. If this is to be done, the school must strive to personalize as much of the student's school experience as is practicable. Every boy and girl must be thought of as an individual with unique problems, interests, and potentials and not as another face in the crowd. Opportunities for individual expression on the part of the student should be encouraged. Such a philosophy dictates a building designed to stimulate such expression, both in an academic and in a social sense.

To these commonly accepted concepts we would add the following:

1. If the school is large it is desirable that the student body be subdivided into smaller units which provide an instructional program that more nearly fits the needs of the individual and at the same time personalizes his relationship to the school.

2. Better instruction may be provided if teachers work in

teams, both in subject matter fields and in the general life of the school.

3. Some aspects of the curriculum can best be taught to large groups exceeding 100 students. Spaces should be provided for such instruction, yet be convertible to smaller units as the need arises. Flexibility and multiple use of space should be basic to the design of the building. Standardization of educational areas should be kept to a minimum, with the emphasis placed on designing spaces that meet particular needs yet are not so frozen that they cannot, at will, be used for other purposes.

4. In order to justify their inclusion, specialized areas such as the shops, home economics rooms, and physical education areas should provide opportunity for all students, including college-preparatory to find something of interest and worth. Therefore these spaces and their special facilities must differ from the traditional layouts of these areas.

5. A school must reflect the needs of its community. Since in this case the community will be expecting preparation for college for approximately 80 per cent of the student body, a program rich in academic opportunities extending beyond the traditional high school courses must be possible. Such a program must not suffer because of building limitations, but rather should be enriched by its environment.

6. High school education is moving toward a twelve-month school year for many students. With the increased emphasis on college entrance requirements, it is only a matter of time before summer courses will become generally available to the student desiring to meet unusual admission standards or to broaden his background in a particular field. It therefore will be prudent to consider not only the heating of the building, but also its overheating in the summer months.

7. Community use of the school plant will be likely to increase in the future. Provisions must be made which not only accommodate this trend but, if fullest use of public property is to be secured, encourage it.

All of the foregoing have implications for the design and planning of a high school in Newton. In general they draw a picture of a building oriented to the student within the context of the requirements of the curriculum. It is this middle path between the extremes of the completely student-centered building on one hand and the completely subject-centered building on the other that we wish to follow. The following describes how we propose to do this.

GENERAL DESCRIPTION OF BUILDING

Outward Appearance

Architectural practice usually dictates that public buildings reflect the predominant architectural style of the community they serve. If this is true, this school will be of contemporary design, for it will serve an area of recently built modern homes. Whether it is of one or two stories will depend somewhat on the terrain - a combination of single and double-storied buildings would be acceptable if suitably designed. Hopefully, the building will reflect our desire that the school will be personal to the child and that monumentalism and overpowering mass be avoided.

Student Body to be Served

The building will be designed to accommodate 1500 pupils in Grades 10 through 12. Many of these people will walk or be driven to school; but it can be expected that some of them will have to be bussed, and some will drive their own cars.

The great majority of the students will be preparing for college, probably approaching 80 per cent. This has implication for the design of both academic and non-academic areas.

Spaces to be Included

Following is a list of spaces that must be provided for in planning the building.

1. Three house units, each designed to accommodate 450-500 pupils, for the instruction of English, languages,

mathematics, social studies, and business education.

2. The following specialized instructional areas:

   a. Science
   b. Home Economics
   c. Shops
   d. Arts

3. Library

4. Cafeteria

5. Physical education facilities for boys and girls

6. Music rooms

7. Auditorium

8. Administrative and guidance offices

9. Service facilities (storage, custodial, heating, etc.)

PHILOSOPHY AND DESCRIPTION OF HOUSE PLAN

If any one trend is clearly discernible in high schools being planned and built in this decade, it is the quest for personalizing the schools. For small schools, the conditions of massiveness and impersonality are not present. But for large city high schools, the problem is real. Schools enrolling a thousand or more pupils have special problems such as these:

1. How to communicate with the student body as a whole, yet how to communicate with individuals and small groups.

2. How to divide the student body into units that are natural for the student, yet efficient for instruction, and administratively manageable.

3. How to extend and scatter the stations to which pupils will report in the morning so that traffic is not concentrated at a single entrance.

4. How to avoid congestion of the student body at lunch time and at the close of school.

5. How to organize the extracurricular program to afford opportunities for participation for all in clubs and athletics, and not confine participation to those of outstanding talents.

6. How to give parents the assurance that they, as individual families, are not lost in the impersonal machinery of the school and that their child is known intimately and well by someone in an administrative post. This is of particular concern to the parents of average children. The child who is either highly talented or extremely nonconforming is visible to the administration even in a large school. But the great majority of pupils who conform and possess normal intellectual endowment are destined to live out their school days in anonymity, their names sometimes mispronounced at graduation.

In order at least partially to avoid such problems as these, this school will be designed to operate on the so-called "house plan" wherein the students are clustered in groups of 450-500 for at least a portion of their academic instruction, and for a larger portion of their less formal school life.

This will necessitate the planning of three small school units, arranged so that additional units can be constructed as needed. These units will have their own administrative head and will be partially autonomous in operation.

In this house, a student will find a sense of belonging, of being considered an individual rather than being lost in the great mass of the school. Here will be a person in administration who will know him well, and a team of guidance personnel and teachers who will know him even better. Here he will find satisfaction in being known by other students, in sharing and participating in house activities, and in having a place that will become the center of his entire school life. Here will be his school home.

In architectural design, then, this unit must have all the elements of informality and friendliness implied by the word "house" without losing any of the functional aspects needed for instruction in academic subjects.

In addition to classrooms, the following spaces will be necessary for proper functioning of the house:

1. Office space for administrative and guidance personnel. This should include separate offices for the administrative head, the guidance head, and clerical help, plus appropriate waiting space for visitors.

2. The common room - a space for students to congregate in either formal or informal situations. This will be an area of many uses - study hall, library, common room, dining area, conference room, and house-assembly area. Here will be the center of house living - the activity center - the planning center - the place that brings youngsters together physically so they can be brought together in spirit. It must be spacious, attractive, light - an area to which pupils will want to come. Even more important it must be flexible. It should be possible for several small groups to meet here simultaneously, or for one large group to do so. This calls for some form of flexible space dividers which can be moved at will to meet the demands of varying situations. In size it should be equal to two large classrooms - approximately 1800 square feet. Allotment of this amount of space is justified for the following reasons:

a. These rooms will be used for study hall purposes. Each house has a total of 14 classrooms, the number needed to meet the requirements for instruction in English, social studies, languages, and mathematics. No space other than the common room is designated as a study hall. Since such a room is necessary to meet programming requirements this justifies at least 1000 square feet which would be the size of a normal "study hall".

b. These rooms will serve as sub-libraries. It is our hope to put in the common rooms the books and other library materials that students are likely to use regularly. In order to justify inclusion of such space we have planned

our central library to the minimum figure suggested by the American Library Association for a school of this size.

c. The common rooms will be used for individual and small group conferences. In a school oriented to college preparation and offering advanced college placement and Newton plan classes, small group conferences will be frequent. No Other space in the house is allotted for this purpose. Moreover, the house plan itself, with its emphasis on the team approach to instruction will make necessary such a gathering place.

d. This space allows for emergency expansion should the need arise. The allotted area of 1800 square feet can easily be divided into two classrooms, if and when enrollment figures require such a change. This would provide an additional six classrooms in any emergency situation.

e. The common room will provide "living" space for each house. This reason in and of itself would not justify the 1800 square feet in each house. However, since the space is justified for reasons already listed, this use of the room is an extremely important one, particularly in a house plan school and in a school where we hope to introduce an adult atmosphere. Related activities would be house parent-teacher meetings, club meetings, class meetings, student council meetings, exchange group teas, and similar semi-social gatherings.

3. Teachers' room and work space. For reasons of teacher morale and related efficiency, it is extremely important that they have a place where they can work and rest. Separate adjacent spaces should be designed to meet these needs. In the workroom should be space for typewriters and duplicating machines as well as ample table room for paper work and planning. Toilet facilities must also be included.

4. Pupil toilet facilities, suitably located.

5. Custodial storage and work room. This is an item quite often overlooked in school building planning. A good custodian is a definite asset to a building, and as a "member of the team"

his needs must be recognized and met.

6. General storage space, suitably located.

7. Individual lockers for every student in the house.

The location of each house with respect to other parts of the building is an important consideration. Its relation to the other houses must be such that while separate from them, it is not isolated. It must be so situated as to have easy access to gym, dining area, specialized instruction area, library, and other related areas, but not to interfere with or be bothered by activities of these other areas.

ADVANCED PLACEMENT AND NEWTON PLANS

Because of their possible impact on building design, a brief description of these two instructional plans should be included in the specifications. Both involve the grouping of students in ways other than the traditional, so that most of their implications have to do with classroom size and flexibility of instructional areas.

The advanced placement plan is a plan whereby students with greater than average talent and interest in math, science, English, history, or foreign languages may receive instruction in advanced phases of these subjects. This instruction often takes them through the normal requirements of the first year of college. Such classes are quite often rather small in number, so that minimum sized classrooms with a maximum amount of equipment and materials are necessary. Such a combination should be available in this school, made possible perhaps by flexible partitioning of larger spaces.

The Newton Plan involves the bringing together for instructional purposes of very large groups and very small groups of students. With several faculty members working as a team, it is the intention of this plan to utilize teaching talents and time better, and at the same time provide more individual instruction to those people who are in need of it. While one instructor is providing a lecture demonstration for groups of 100 to 150 students, the

other members of the team may be meeting with groups of 4 or 5 students in an individualized, conference-like situation. Obviously, the traditionally designed classroom would not accommodate either of these situations, so that once again the program dictates a need for flexibility-at-will whereby spaces can be provided, large or small, to meet the particular needs of the moment.

THE TEAM CONCEPT OF INSTRUCTION

While the team concept of instruction may not have implications for the design of this building other than those already mentioned, it is such an integral part of our entire philosophy that it seems necessary to explore as a part of these educational specifications some of the ways in which this plan might operate.

The house units of this school must be more than empty buckets. To design a building around the house plan without providing an educational program to fit the design would be to defeat the very purpose of such a design. Since the educational program is in essence the <u>instructional</u> program, the teaching staff, then, is the key that will - or will not - make this plan function. If the basic idea is one of a <u>group</u> of students working with a <u>group</u> of teachers, the team concept of instruction is also basic.

Without attempting to expound at great length the theories or philosophies involved, following are some of the specific ways in which such a team might operate:

1. <u>As an administrative unit</u> - Such a breaking down of the entire teaching staff into smaller units would create more opportunities for direct administrator-teacher-pupil-parent relationships.

2. <u>As a guidance unit</u> - It seems obvious that if a group of teachers were working as a team with the same relatively small group of students, the opportunities for strengthening the guidance program would also increase.

3. <u>As an inter-disciplinary unit</u> - The elementary and

junior high schools have long recognized the fact that there are strong relationships between and among the various subject-matter disciplines found in our public schools. It would seem that this team approach would lend itself to similar cooperation on the part of traditionally separate fields of study on the high school level to the benefit of the entire instructional program.

4. As an intra-disciplinary unit - There is no reason to believe that the team concept would lessen to any degree the cooperative efforts on the part of teachers within a single subject-matter field.

5. As a planning unit - As the team approach becomes a part of the basic philosophy of the staff, all phases of the planning process should be strengthened, if for no other reason than the fact that these people would be together more often in a physical sense and therefore have greater opportunity for such planning.

6. As an evaluative unit - If the house plan creates a situation where the team of staff members gets to know well the same group of students, it follows that this team would be able to evaluate more thoroughly and constructively the individual students in this group.

7. As a part of the co-curricular and extracurricular functions of the house - One of the strengths of the house plan is that it provides more opportunities for wider participation on the part of more students. With such a program, the planning and guiding functions of the staff team become increasingly important in bringing as many students as possible into a worthwhile activity.